

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/010460

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ H01M10/40, 4/02, 2/30, 2/20, 10/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ H01M10/40, 4/02, 2/30, 2/20, 10/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1926-1996 Toroku Jitsuyo Shinan Koho 1994-2004

Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	JP 2003-229117 A (NEC Corp.), 15 August, 2003 (15.08.03), Claims 1 to 10, Par. Nos. [0035], [0072]; examples; drawings & EP 1333520 A2 & US 2003/148178 A1 & CN 1437277 A	1-5
P,X	JP 2003-346798 A (NEC Corp.), 05 December, 2003 (05.12.03), Claims 1 to 12; examples; drawings (Family: none)	1-5
P,X	JP 2003-338275 A (Nissan Motor Co., Ltd.), 28 November, 2003 (28.11.03), Claims 1 to 16; examples; drawings & EP 1394874 A1 & US 2003/215702 A1	1-5

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search
24 September, 2004 (24.09.04)Date of mailing of the international search report
12 October, 2004 (12.10.04)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	JP 2004-47161 A (Nissan Motor Co., Ltd.), 12 February, 2004 (12.02.04), Claims 1 to 11; examples; drawings (Family: none)	1-5
P,X	JP 2004-79481 A (Nissan Motor Co., Ltd.), 11 March, 2004 (11.03.04), Claims 1 to 5; examples; drawings & US 2004/38124 A1	1-5
Y	JP 2003-187781 A (Sony Corp.), 04 July, 2003 (04.07.03), Claims 1 to 13; examples; drawings (Family: none)	1-5
Y	JP 2002-252036 A (Mitsubishi Materials Corp.), 06 September, 2002 (06.09.02), Claims 1 to 5; examples; drawings (Family: none)	1-5
Y	JP 2002-251989 A (Mitsubishi Materials Corp.), 06 September, 2002 (06.09.02), Claims 1 to 5; examples; drawings (Family: none)	1-5
Y	JP 8-273702 A (Hitachi, Ltd.), 18 October, 1996 (18.10.96), Claim 1; Par. Nos. [0008], [0015]; examples & EP 729194 A2 & US 6083645 A	1-5
Y	JP 2003-208895 A (Toyota Central Research And Development Laboratories, Inc.), 25 July, 2003 (25.07.03), Claims 1 to 5; Par. No. [0002]; examples (Family: none)	1-5
Y	JP 2003-217594 A (Nissan Motor Co., Ltd.), 31 July, 2003 (31.07.03), Claims 1 to 3; Par. No. [0002]; examples (Family: none)	1-5
Y	JP 2002-352863 A (NGK Insulators, Ltd.), 06 December, 2002 (06.12.02), Claims 1 to 14; examples & EP 1244170 A2 & US 2002/136944 A1	5
Y	JP 2003-187857 A (Nissan Motor Co., Ltd.), 04 July, 2003 (04.07.03), Claims 1 to 17; full descriptions & EP 1326294 A2 & US 2003/113621 A1	5